

EXHIBIT A

1. (Amended) An [(optical)] filter comprising;
a dielectric stack of alternating [(relatively)] high and low refractive index layers;
[a dielectric spacer layer, in juxtaposition with]
an opaque, reflective metallic layer [or substrate]; and
a dielectric spacer layer located between the dielectric stack and the metallic layer, the
filter having a resonant wavelength, at which wavelength incident radiation is channelled into,
and absorbed by, the metallic layer [or substrate].
2. (amended) An [(optical)] filter, as claimed in Claim 1, [in which unique case]
wherein the dielectric spacer layer has the same composition and thickness as one of the
constituent layers in the dielectric stack[, and wherein it therefore appears that the stack is in
direct Juxtaposition with the metallic layer or substrate].
3. (amended) An [(optical)] filter, as claimed in Claim 1 [or 2], wherein one of the
dielectric stack and[/or] spacer layer, varies in thickness spatially, over the metallic layer [or
substrate].
4. (amended) An [(optical)] filter, as claimed in [any of the preceding claims] claim 1,
wherein one of the dielectric stack, and[/or] spacer layer, thickness varies circularly over the
metallic layer [or substrate].
5. (amended) An [(optical)] filter, as claimed in [any of the preceding claims] claim 1,
wherein one of the dielectric stack, and[/or] spacer layer thickness varies linearly over the
metallic layer [or substrate].
6. (amended) An optical filter as recited in claim 1 wherein [A monolithic, selectively
variable, or tunable-wavelength, narrow-band, absorption (optical) filter, comprising a dielectric
stack, and/or spacer, of spatially varying-thickness, deposited upon an absorbent and reflective

metallic layer, or substrate,] the wavelength absorbed [varying] varies with [(]linear and/or rotational[)] position of [(]the stack and/or spacer[)] filter], in relation to incident light.

7. (amended) An optical filter as recited in claim 1 wherein [A single, or multiple wavelength (tunable), (optical) filter, including a metallic layer, separated, by a dielectric spacer layer, of a low refractive index material, from a dielectric mirror stack, comprising alternating layers, respectively of the same (or similar) low refractive index material, and a relatively high refractive index material; a primary resonant wavelength occurring when] wherein the spacer layer is formed from a low refractive index material and is equal to even integer multiples of a quarter-wave [(]optical thickness[)], including a zero (absentee layer), and symbolically described as;

Substrate / M nL (HL)^x H / ambient

where:

M is the metal mirror thin film;

n = 0, 2, 4, 6, etc...; even integer multiples of the quarter wave optical thickness of the spacer layer; and

H and L represent quarter wave optical thicknesses respectively of the high and low refractive index layers.

8. (amended) An optical filter as recited in claim 1 wherein [A single, or multiple wavelength (tunable) (optical) filter, including a metallic layer, separated by a dielectric spacer layer, of a high refractive index material, from a dielectric mirror stack, comprising alternating layers, respectively of the same (or similar) high refractive index material; and a relatively low refractive index material; a primary resonant wavelength occurring when] wherein the spacer layer is formed from a low refractive index material and is equal to odd integer multiples of quarter-wave (optical thickness), symbolically described as;

Substrate / M nH (LH)^x / ambient

where:

M is the metal mirror thin film;

n = 0, 1, 3, 5, 7, ..., odd integer multiples of the quarter wave optical thickness of the spacer layer;

and H and L represent quarter wave optical thicknesses respectively of the high and low refractive index layers.

Claim 9 deleted

10. (amended) An optical filter as recited in claim 1 further [A single, or multiple wavelength (tunable) (optical) filter, with a dielectric reflector] comprising a tiered multi-layer stacking sequence of:

Substrate / M H (LH)⁴/ ambient where H and L equal one quarter-wave optical thicknesses, of relatively high and low refractive index materials, respectively, zinc sulphide and thorium flouride.

11. (amended) An optical filter as recited in claim 1 further [A single, or multiple (tunable) wavelength (optical) filter, with a dielectric reflector] comprising a tiered multi-layer stacking sequence of:

Substrate / M HHH (LH)⁴/ ambient

where H and L equal one quarter-wave optical thicknesses, of relatively high and low refractive index materials, respectively, zinc sulphide and thorium flouride.

12. (amended) An optical filter as recited in claim 1 further [A single, or multiple (tunable) wavelength (optical) filter, with a dielectric reflector] comprising a tiered multi-layer stacking sequence of:

Substrate / M (HL)²xH(LH)²/ ambient where H and L equal one quarter-wave optical thickness, of relatively high and low refractive index materials, respectively, zinc sulphide and thorium flouride; 'x' is between about 4 through 1000 [for example x= 100].

13. (amended) An [(optical)] filter, as claimed in [any of the preceding claims], claim 1 incorporating additional dielectric spacers, configured to steepen the absorption characteristic edge and so square off filter performance.

14. (amended) An induced absorption [(optical)] filter as recited in claim 1 configured to operate in the wavelength band 8 to 12 μ m.

Claims 15 and 16 deleted

17. (amended) A laser incorporating [an Induced Absorption Filter (IAF)] the optical filter of claim 1 at one end of a resonator.

18. (amended) A laser incorporating [an Induced Absorption Filter (IAF),] a pair of optical filters as recited in claim 1 located at each end of a resonator.

Claims 19 to 24 deleted.

RECEIVED